



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,965	08/25/2005	Takuji Higashioji	TOR-05-1179	6051
35811 7590 12/02/2008 IP GROUP OF DLA PIPER US LLP ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103				
EXAMINER NELSON, MICHAEL B				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
12/02/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,965

Applicant(s)

HIGASHIOJI ET AL.

Examiner

MICHAEL B. NELSON

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 6, 8, 10-14 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6, 8, 10-14 and 28-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/550a)
Paper No(s)/Mail Date 06/29/05; 08/22/08; 09/03/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/08 has been entered.

Response to Amendment

2. Applicant's amendments to the claims filed on 09/29/08 have been entered. Claims 3-5, 7, 9 and 15-27 are cancelled and claims 1, 2, 6, 8, 10-14, 28-36 are currently under examination on the merits.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 1, 2, 8, 10-14, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi (JP 10-0245542), see machine translation (a human translation has been requested and will be provided with the next office action).

Regarding claims 1 and 28, Takashi discloses a laminated film comprising a coextruded B/A/B layered structure ([0045] and [0046]) with layers B being biaxially stretched but non-porous polyester ([0002] and [0006]) and layer A being a biaxially stretched, porous layer of polyester and a immiscible polymer (i.e. liquid crystal polyester, [0009] and [0017]). The liquid crystal polyester immiscible polymer is disclosed as being present at 5-45% ([0020]) which leaves 95-55% non-liquid crystal polyester (i.e. the polyethylene terephthalate as disclosed in [0009]), which falls within the claimed range. The process of stretching the film is disclosed as causing the pores (i.e. cracks or fine bubbles) ([0022]-[0023]). In one example the relative thickness of the layers are disclosed as B/A/B=20/40/20 (i.e. 50% porous layer), which falls within the claimed range. The fine bubbles of the A layer are a network structure.

Takashi does not specifically disclose the instant claimed specific gravity, however, one of ordinary skill in the art would adjust the amount of bubbles (i.e. amount of void space and

therefore specific gravity) in the network containing layer, through routine experimentation, in order to optimize the mechanical strength (among other properties) of the overall laminate.

Regarding claims 2, 8, 10-14 and 29, Takashi discloses all of the limitations as set forth above. Additionally, Takashi discloses that the non-fine bubble layers are on both sides of the bubble layer. The liquid crystal polyester immiscible polymer is disclosed as being present at 5-45% ([0020]). In one example the relative thickness of the layers are disclosed as $B/A/B=20/40/20$ (i.e. 50% porous layer), which falls within the claimed range. Non-liquid crystal polyester (i.e. the polyethylene terephthalate as disclosed in [0009]) is disclosed in both A and B layers.

Regarding the various physical properties of claims 12-14, the amount of void space (i.e. the amount of bubbles) is a variable that one having ordinary skill in the art would have found obvious to modify, through routine experimentation, to optimize the mechanical strength, thermal insulation and thermal expansion characteristics of the overall laminate.

7. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi (JP 10-0245542), see machine translation (a human translation has been requested and will be provided with the next office action) as applied to claim 1 above, and further in view of Nakatani et al. (2001/0003610).

Regarding claims 30-32, Takashi discloses all of the limitations as set forth above. Takashi does not explicitly disclose electronic circuitry as an commercial application. Nakatani

et al. discloses a void containing, insulating, base material with tackfree (i.e. release films) on both sides thereof for use with electronic circuits (See Abstract).

The inventions of both modified Takashi and Nakatani et al. are drawn to the field of void containing laminates and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have used the void containing laminate of modified Takashi as a tackfree electrically insulating circuit material as taught by Nakatani et al. for the purposes of imparting improved marketability to the invention.

8. Claims 6 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi (JP 10-0245542), see machine translation (a human translation has been requested and will be provided with the next office action) as applied to claim 1 above, and further in view of Nakamura et al. (U.S. 5,830,940).

Regarding claims 6 and 33-36, Takashi discloses all of the limitations as set forth above. Takashi only discloses a general liquid crystal polyester ([0017]) for use with the non-liquid crystal polyester ([0009]). Nakamura et al. discloses a liquid crystal polyester which was known to be made by copolymerizing polyethylene terephthalate with p-hydroxybenzoic acid (C1, L20-50) and which exhibits superior flowability, thermal resistance and mechanical properties.

The inventions of both Takashi and Nakamura et al. are drawn to the field of liquid crystal polyesters and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the non-specific liquid crystal polyester of Takashi by using the specific example of a liquid crystal polyester as taught by Nakamura et al. for the purposes of imparting superior flowability, thermal resistance and mechanical properties.

Response to Arguments

9. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. The remarks filed on 9/29/08 and 10/29/08 have both been considered but are deemed to be related solely to the previous rejections based primarily on Matsumura and are not deemed to be relevant to the current rejections.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/540,965
Art Unit: 1794

Page 7

/MN/
11/07/08

/Carol Chaney/
Supervisory Patent Examiner, Art Unit 1794